

PATENT ABSTRACTS OF JAPAN

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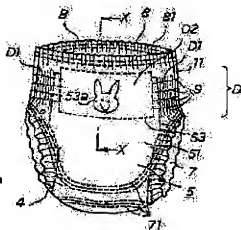
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(54) ABSORPTIVE ARTICLE

(57)Abstract:

PROBLEM TO BE SOLVED: To provide an absorptive article, such as a shorts type diaper, which has adaptability to broad sizes and excellent ease of putting on, is adequate fitness with proper tightening force and is excellent in appearance and has girth gathers.

SOLUTION: This absorptive article 1 includes a liquid permeable front surface sheet 2, a liquid impermeable leak-proof sheet 3 and a liquid holdable absorber 4 and has plural girth part elastic members 9 arranged toward a circumferential direction in a girth part D existing at the wearing person's girth. The girth part elastic members 9 are fixed in a stretched state in such a manner that the elastic stretchability may be exhibited in a part D1 where the absorber 4 does not exist. The girth part elastic members are cut without being fixed in a part D2 where the absorber 4 exists, by which the elastic stretchability is not substantially formed and the gathers are not formed.



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CLAIMS

[Claim(s)]

[Claim 1]In a trousers type absorbent article provided with two or more grith enclosure part elastic members allotted to a grith enclosure part which possesses a fluid permeability surface sheet, a watertight sheet of fluid impermeability, and an absorber of liquid holdout, and is located in a wearer's periphery towards a hoop direction, An absorbent article in which it is fixed by a stretched state in a part to which said absorber does not exist so that elastic stretchability may be revealed, and said grith enclosure part elastic member is cut, without being fixed in a part to which said absorber exists, and elastic stretchability is not substantially revealed, and gathers are not formed.

[Claim 2]The absorbent article according to claim 1 currently cut with a watertight sheet or other web materials at least in a part to which *** immobilization of said grith enclosure part elastic member is carried out by an outer layer material which forms an outermost surface of an absorbent article, and a watertight sheet or other web materials, and said absorber exists.

[Claim 3]The absorbent article according to claim 1 or 2 in which concealment methods which conceal a grith enclosure part elastic member are provided in a part to which said absorber in said grith enclosure part exists.

[Claim 4]The absorbent article according to claim 3 in which said concealment methods are concealing sheets.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention]This invention is excellent in leakage tightness, and relates to a good-looking absorbent article.

[0002]

[Description of the Prior Art]Generally, the disposable diaper possessed the fluid permeability surface sheet, the watertight sheet of fluid impermeability, and the absorber of liquid holdout, and is divided into the venter part located in a wearer's venter at the time of wear, the back located in the back, and the length-from-the-crotch-to-the-cuff part located between them. These days, the what is called trousers type disposable diaper which carried out junction immobilization of the side edge part of a venter part and the side edge part of the back mutually, and formed the leg opening of a right-and-left couple and one waist opening is proposed (JP,61-207605,A etc.).

[0003]Such a trousers type disposable diaper has the feature at the point that taking up and down is possible like the usual trousers as compared with a what is called flat type diaper. By forming the leg opening and waist opening of a couple elastically, respectively, a wearer can be made to be able to stick axle part the circumference of the belly, and fit nature can be raised. And a wearer can usually wear in the state of a standing position. for this reason -- crawling -- it is used for various uses, such as an object for toilet trainings for motions, such as a walk, to promote the aversion to a diaper of the object for children and a small child which became active, a disagreeable incontinentia person, object for an adult which can be walked.

[0004]It is required that it has the fit nature which was excellent in order to stop the gap omission of a diaper and not to leak excrement to a trousers type disposable diaper, and that a wearer's active motion should be followed further. In order to satisfy such a demand, in a what is called pull-up type trousers type diaper. In JP,2-4364,A, an elastic side panel is provided in the side portion which connects the backside portion and venter portion of a main part, and the trousers type diaper which has arranged the elastic member to the waist opening of a main part is indicated. However, this trousers type diaper tends to produce a crevice in a waist opening and a leg opening. Since the side panel can expand and contract only the side panel which can create only the thing inferior to elastic stress characteristics, but is inferior to elastic stress characteristics in this way, generally its size fitness range is narrow. In order to stop the gap omission of a diaper, the elastic stress of the side panel had to be heightened and the unnecessary feeling of oppression is given to the wearer. When a diaper was opened, excessive power might be required, and the ease of disposing and the ease of vomiting might also be spoiled.

[0005]In the patent No. 2134031 gazette, gathers are formed over the perimeter of a grith enclosure part, and the trousers type disposable diaper made as [fit / a wearer / the circumference of the trunk of a diaper / certainly] is proposed. Since the perimeter expanded and contracted, even if the disposable diaper concerning this proposal suppressed the extension rate of rubber to about 2 times, it can take the wide size scope of a wearer's grith enclosure

part. In JP,7-265357,A, the trousers type diaper provided with the elastic member which forms the gathers which followed the side part of the circumference of a trunk substantially is proposed.

[0006]As mentioned above, although various disposable diapers in which the circumference gathers of a trunk were formed in a wearer's side are proposed, The actual condition is that what still has broad size fitness and the outstanding run-off low price, secured suitable fit nature by proper clamping force, and was moreover excellent in appearance is not proposed.

[0007]Therefore, the purpose of this invention is to provide absorbent articles, such as a trousers type diaper which has the circumference gathers of a trunk which secured suitable fit nature by broad size fitness, the outstanding run-off low price, and proper clamping force, and were moreover excellent in appearance.

[0008]

[Means for Solving the Problem]This invention possesses a fluid permeability surface sheet, a watertight sheet of fluid impermeability, and an absorber of liquid holdout, In a trousers type absorbent article which it had, two or more grith enclosure part elastic members allotted to a grith enclosure part located in a wearer's periphery towards a hoop direction said grith enclosure part elastic member, In a part to which it is fixed by a stretched state in a part to which said absorber does not exist so that elastic stretchability may be revealed, and said absorber exists, Said purpose is attained by providing an absorbent article in which it is cut, without being fixed, and elastic stretchability is not substantially revealed, and gathers are not formed.

[0009]

[Embodiment of the Invention]Hereafter, one desirable embodiment of the absorbent article of this invention is described in detail. The disposable diaper 1 as an absorbent article of this embodiment, As shown in drawing 1 - 3, it is the trousers type absorbent article provided with two or more grith enclosure part elastic members 9 allotted to the grith enclosure part D which possesses the fluid permeability surface sheet 2, the watertight sheet 3 of fluid impermeability, and the absorber 4 of liquid holdout, and is located in a wearer's periphery towards the hoop direction.

[0010]Specifically, the trousers type disposable diaper 1 of this embodiment consists of the absorbent body 10 possessing the surface sheet 2, the watertight sheet 3, and the absorber 4, and the outer layer body 5 which is located in the outside of the absorbent body 10 and is carrying out adhesion fixing of the absorbent body 10. When the basic structure of the disposable diaper of this invention is explained further, the disposable diaper 1 of this embodiment, The other side edge A2 of the venter part A of the outer layer body 5 and other side edge B-2 of the back B are joined for the one side edge A1 of the venter part A of the outer layer body 5, and the one side edge B1 of the back B again, respectively, and the waist opening 8 and the leg opening 7 of the couple are formed. In this embodiment, along with the waist opening 8, two rubbers are arranged as the waist elastic member 81, and three rubbers are arranged as the leg elastic member 71 along with the leg opening 7.

[0011]The solid guard 6 by whom the solid guard elastic member 61 has been arranged so that elasticity in free end vicinity is possible is formed in longitudinal direction both sides of the absorbent body 10. Along with the longitudinal direction of the absorbent body 10, the solid guard elastic member 61 vacates a prescribed interval, and is allotted four.

[0012]In [** and] the disposable diaper 1 of this embodiment, In the part D1 to which the absorber 4 does not exist, it is fixed by a stretched state so that elastic stretchability may be revealed, and the grith enclosure part elastic member 9 is cut, without being fixed in the part D2 to which the absorber 4 exists, and elastic stretchability is not revealed substantially, and gathers are not formed.

[0013]In the part D1 where the grith enclosure part elastic member 9 will not lap with the absorber 4 if it explains in full detail, i.e., the part to which the absorber 4 does not exist, *** immobilization is carried out via adhesives with the elastic member firmly attached seat 52 as the outer layer material 51 which forms the outermost surface of a disposable diaper, and other web materials located in the body side. In the part D2 to which the absorber 4 exists, it is cut with the elastic member firmly attached seat 52, without being fixed to other members. That is,

in this embodiment, the outer layer body 5 possesses the outer layer material 51 and the elastic member firmly attached seat 52. **** immobilization is carried out with the outer layer material 51 and the elastic member firmly attached seat 52, and the waist elastic member 81 and the leg elastic member 71 also constitute the outer layer body 5.

[0014] In this embodiment, the concealing sheet 53 is arranged on the inner surface side of the outer layer material 51 as concealment methods which conceal the grith enclosure part elastic member 9 and the cutting portion of the elastic member firmly attached seat 52 to the part D2 to which the absorber 4 in the grith enclosure part D exists. As for the grith enclosure part elastic member 9, in the part D2 to which the absorber 4 exists, although the elastic member is un-functionalized, the scrap of an elastic member may be transparent and may appear from the outside, but by the concealing sheet 53 being formed, the scrap can be concealed and appearance becomes good. In the part D2 to which the absorber 4 exists in this embodiment, The auxiliary seat 54 is arranged between the outer layer material 51 and the elastic member firmly attached seat 52, the grith enclosure part elastic member 9 is located between the auxiliary seat 54 and the elastic member firmly attached seat 52, and the concealing sheet 53 is arranged so that it may be located between the auxiliary seat 54 and the outer layer material 51. The auxiliary seat 54 is a little broader than the concealing sheet 53, and the length of it is almost the same as the width of the outer layer body 5. Thereby, the grith enclosure part elastic member 9 is being fixed via the auxiliary seat 54 with the outer layer material 51 and the elastic member firmly attached seat 52. And the cut grith enclosure part elastic member 9 is located in the crosswise flank side of the absorber 4 in the state where it contracted. In this embodiment, the grith enclosure part elastic member 9, Since it is allotted and cut, without fixing between each sheet which constitutes the outer layer body 5 from a state where it elongated, as the elastic member firmly attached seat 52 and the auxiliary seat 54 are also cut and are shown in drawing 2 on the occasion of cutting of the grith enclosure part elastic member 9, the precut opening 55 is formed.

[0015] As for the size of the concealing sheet 53, it is preferred to carry out to such an extent that the precut opening 55 can be hidden and also the cut end in which the grith enclosure part elastic member 9 was confused can be hidden, and it makes it 20-150 mm in length, and 250-500-mm-wide rectangular form in this embodiment. However, the concealing sheet can serve as a liquid impermeable sheet, and a required surface integral is arranged to an absorber in that case. Printing which is visible to the concealing sheet 53 from the outside during wear. For example, it is preferred that printing patterns, such as distinction in front and behind, a display of moisture permeability, a character, a brand name, and an abandonment means, are formed by printing, and the printing pattern 53a which consists of a picture of the rabbit as a character is printed in this embodiment. This printing pattern 53a is made as [recognize / through the outer layer material 51 / outside]. That is, the outer layer material 51 used by this embodiment is made as [be / in sight / printing pattern / the printing pattern 53a is transparent and]. Like this embodiment, when the gathers by a grith enclosure part elastic member are not formed, the fault that printing of a character etc. is hard coming to be visible by the wrinkles of gathers like the conventional absorbent article is canceled. The printing pattern 53a in this embodiment is formed in one longitudinal direction abbreviation center section of the concealing sheet 53. Thus, as for printing, it is more preferred than the running mold 53a to consider it as one printing pattern per sheet at the point that a pattern is not divided in a product and completeness becomes high also at appearance. Like this embodiment, when the precut opening 55 arises, it is preferred to take into consideration to paste up except for the precut opening 55 etc. on the occasion of adhesion with the absorbent body 10 and the outer layer body 5.

[0016] As a formation material of the grith enclosure part elastic member 9, the thing of a rectangle, a square, circular, and polygonal shape which has a filar section, and the thing of tape shape are preferred as publicly known elastic members, such as rubber of crude rubber, spandex, foam, and a film type, and a gestalt. The elastic member of the character plasticized with heat is also used suitably. As a formation material of the outer layer material 51, it has moisture permeability and breathability by solution resistance nature and fluid impermeability preferably, and it is the Takayoshi flexibility sheet of the feel near an underwear, and textile fabrics, a

nonwoven fabric, a film, a moisture permeation film, puncturing films, and such composites are specifically used. As for the solid guard's 6 formation material, it is preferred that it is a raw material of solution resistance nature, fluid impermeability, and breathability. As for the formation material of the watertight sheet 3, it is preferred that it is the material which has moisture permeability and breathability. The formation material in particular of the surface sheet 2 and the absorber 4 is not restricted, but a publicly known material can be especially used for it without restriction. As a formation material of the concealing sheet 53, it is the Takayoshi flexibility sheet of the feel near an underwear, and textile fabrics, a nonwoven fabric, a film, a moisture permeation film, a puncturing film, papers, and such composites are specifically used. Although what combined the melt-blown nonwoven fabric, the spun bond nonwoven fabric, the melt-blown nonwoven fabric, and the spun bond nonwoven fabric has especially preferred concealment nature highly in a nonwoven fabric, it is not restricted to this. As for a concealing sheet, what the printing pattern is given in the outside surface is preferred. As a formation material of the auxiliary seat 54, it is the Takayoshi flexibility sheet of the feel near an underwear, and textile fabrics, a nonwoven fabric, a film, a moisture permeation film, a puncturing film, papers, and such composites are specifically used.

[0017]The trousers type disposable diaper 1 of this embodiment can be used like a usual trousers type disposable diaper. And since the disposable diaper 1 of this embodiment is constituted like ****, having broad size fitness, and the outstanding run-off low price and proper clamping force, and having the appearance felt refreshed — an absorber — a rib — ***** — not having — to a sake, thickness becomes thin — an absorber — a rib — ***** — not having — since the width of the absorber needed since an absorber is not shrunken during wear can maintain absorption performance at least and can make an absorber small, the material of construction can be reduced, a cost cut can be attained, and miniaturization can be attained further.

[0018]The disposable diaper which has arranged the circumference gathers of a trunk selectively like this embodiment has the three following advantages especially.

** an absorber — the circumference gathers of a trunk — a rib — ***** — not having — a wearer can be made to fit using the width of an absorber effectively an absorber — a rib — ***** — having — if — since it becomes narrower than absorber width with actual absorber width under wear, there is a possibility that absorption performance may fall, an absorber — a rib — ***** — not having — as, even if the inside dimension of a diaper is coincided with a wearer's circumference size of a trunk and it extends the elastic member of the circumference of a trunk to extension **** mostly, Since it is constituted so that the stress of the elastic member of the circumference of a trunk may reveal the maximum when [that the circumference size of a trunk is small] it elapses, and it disposes, and is hot and the inside dimension of a disposable diaper is made to wear as the maximum, it is hardly realistic. The feel cannot be wiped away, although the feel which ***** (ed) arises by the rib of an absorber and some improve with the coating method of hot melt adhesive.

** The appearance at the time of wear (appearance) should feel it refreshed. It is to lose a rib to the center portion of the front face of a diaper, and a rear face, and for appearance to feel it refreshed.

** Since the width of an absorber can be formed narrowly, the materials (a nonwoven fabric, carrier tissue, etc.) used for an absorber can be reduced, and it is effective in a cost cut.

[0019]The disposable diaper 1 of this embodiment creates the absorbent body 10 in accordance with a conventional method first. **** the grith enclosure part elastic member 9 with the elastic member firmly attached seat 52 and the auxiliary seat 54, and cut treating of the prescribed spot is carried out. Both are joined and the outer layer body 5 is formed at the same time it cuts the grith enclosure part elastic member 9, and also it pastes the concealing sheet 53 together to the outside of the auxiliary seat 54 and it carries out **** immobilization of the waist elastic member 81 and the leg elastic member 71 with the outer layer material 51 and the elastic member firmly attached seat 52. It is obtained by joining the outer layer body 5 and the absorbent body 10 which were obtained at last, carrying out junction immobilization of the both sides edge of the venter part A in the outer layer body 5, and the back B, respectively, and

considering it as a trousers type.

[0020]receiving cutting with end gear teeth, such as a rotary cutting die, a share cutter, and a pinch cutter, -- the industries, such as a dental combination, a heat seal cut, an ultrasonic seal cut, a pressure welding cut, a water jet cutter, -- it can carry out using a publicly known cutting means. Although cutting can also be performed in the state where the grith enclosure part elastic member 9 was made to meet the auxiliary seat 54 or the elastic member firmly attached seat 52, it is necessary to carry out temporarily fixing of the grith enclosure part elastic member 9 to one of materials then, it may cut, just before pasting together the auxiliary seat 53 and the elastic member firmly attached seat 52. As a cutting process by heat seal cut, heat both or one side of a roll of a couple, and it lets during prudence or the roll on which the pressure was put additionally pass. The method of applying heat and a pressure to each sheet which pinches the grith enclosure part elastic member 9 of a part and this which should be cut with the seal pattern which can cut the grith enclosure part elastic member 9 is taken. Although the temperature conditions of a heat seal roll differ in an optimal condition with a linear pressure and linear velocity, they are a range which is about 50-300 °C. A desirable seal pattern is the minimum linear pattern about the grith enclosure part elastic member of a non adhesion region the intersecting perpendicularly and dividing in the center section mostly. In the case of two or more grith enclosure part elastic members, it may divide into plurality and may divide.

[0021]This invention is not restricted to an above-mentioned embodiment, and can be applied to a sanitary napkin, an incontinence pad, etc. other than the object for adults, and the disposable diaper for children. Although the grith enclosure part elastic member 9 illustrated and explained what was allotted so that elastic stretchability might be revealed in the abbreviated whole region of the part where the absorber 4 does not exist, it may be made to reveal elastic stretchability only partly. Only the flank at the past time may be pasted and the grith enclosure part elastic member 9 may be pasted up only on the flank at the later self time. When the appearance of a diaper when the grith enclosure part elastic member 9 at the past time is pasted up only on a flank and it sees from before feels it refreshed and only the flank at the later self time is made to paste, the appearance of a diaper when it sees from back feels it refreshed, and there is a merit, like that it is easy to carry out adhesion of the tape for abandonment and printing is legible. In the example mentioned above, the grith enclosure part elastic member 9 is arranged so that an absorber may be crossed, but the grith enclosure part elastic member 9 can be arranged also above an absorber by shortening the length of an absorber or displacing an absorber at the past time. Thus, when there are some (this is hereafter called upper part elastic member) which are located in the waist opening side rather than the upper bed edge of an absorber among two or more grith enclosure part elastic members 9, an upper part elastic member. When it may allot so that elasticity of the whole is possible, and extension wire is drawn from the edges on both sides of an absorber, the portion which makes non-elasticity is located in the inner direction of two extension wire, and is located in the method of the outside may be allocated so that it can expand and contract. The grith enclosure part elastic member arranged near the waist gathers is also the same.

[0022]The grith enclosure part elastic member 9 can be fixed using publicly known means, such as heat sealing, that there is especially no restriction without using adhesives. Since material may float and appearance may worsen in the non adhesion region of the grith enclosure part elastic member 9, when not pasting up at all although hot melt adhesive is not made to intervene between the auxiliary seat 54 and the elastic member firmly attached seat 52 fundamentally, Coating of the adhesives of the quantity which does not interfere even if coating of the adhesives is carried out in the portion in which the grith enclosure part elastic member 9 does not exist or it carries out coating may be carried out. What is necessary is just not to necessarily expand [to suppose altogether expanding and un-contracting the grith enclosure part elastic member 9 of a field which laps with an absorber as most desirable gestalt in order to acquire the effect of a request of this invention, but] and contract at least some elastic members not only this but on an absorber in the embodiment mentioned above. About the range made into non-elasticity, it is preferred about the trousers type diaper for small children that it is the range or less [20 or more] about 1 / 3/4 one of that or more about 1 / 2, and product

overall width of absorber width do not expand and contract. About the trousers type diaper for adults, it is preferred that it is the range or less [20 or more] about $1/3$ or more of that or more about $1/3$, and product overall width of absorber width do not expand and contract.

[0023] It is effective in the control which slips down by the ability to also arrange two or more more elastic members towards the length-from-the-crotch-to-the-cuff part C, and raising appearance. The grith enclosure part elastic member 9 can also be arranged so that the gathers of the grith enclosure part D may curve. The auxiliary seat 54 may be arranged to the inner surface (body) side of the elastic member firmly attached seat 52. The concealing sheet 53 will be arranged on the outside of the elastic member firmly attached seat 52 in that case. Although it is made not to produce the precut opening 55 like an above-mentioned embodiment and the grith enclosure part elastic member 9 is cut, to the auxiliary seat 54 and the elastic member firmly attached seat 52, it may cut so that it may not leave a damage at all. The concealing sheet 53 may be arranged on the outside of the outer layer material 51, and can attain the same effect as an above-mentioned embodiment also in this case. Although what formed the concealing sheet 53 separately as concealment methods was illustrated in the above-mentioned embodiment, It is preferred that exclude the concealing sheet 53 using what consists of a high material of concealment nature as the outer layer material 51, and outer layer material 51 the very thing is given to printing in this case well also as concealment methods at the outer layer material 51. It may manufacture by pasting up the grith enclosure part elastic member 9 which cuts the grith enclosure part elastic member 9 beforehand, and was cut on the part D2 to which the absorber 4 does not exist.

[0024]

[Effect of the Invention] The absorbent article of this invention has the circumference gathers of a trunk which secured suitable fit nature by broad size fitness, the outstanding run-off low price, and proper clamping force, and were moreover excellent in appearance.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1]Drawing 1 is a perspective view showing one embodiment of the disposable diaper as an absorbent article of this invention.

[Drawing 2]Drawing 2 is an exploded perspective view showing the expanded state of the disposable diaper shown in drawing 1.

[Drawing 3]Drawing 3 is a X-X sectional view of the disposable diaper shown in drawing 1.

[Description of Notations]

- 1 Disposable diaper
- 10 Absorbent body
- 11 Joined part
- 2 Surface sheet
- 3 Watertight sheet
- 4 Absorber
- 5 Outer layer body
- 51 Outer layer material
- 52 Elastic member firmly attached seat
- 53 Concealing sheet
- 54 Auxiliary seat
- 55 Precut opening
- 6 Solid guard
- 61 Solid guard elastic member
- 7 Leg opening
- 71 Leg elastic member
- 8 Waist opening
- 81 Waist elastic member
- 9 Grith enclosure part elastic member
- A Venter part
- B Back
- C Length-from-the-crotch-to-the-cuff part
- D Grith enclosure part

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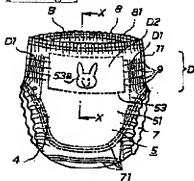
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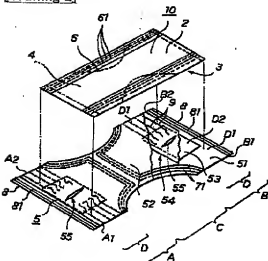
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DRAWINGS

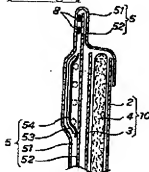
[Drawing 1]



[Drawing 2]



[Drawing 3]



【特許請求の範囲】

【請求項1】 液透過性の表面シート、液不透透性の防漏シート、及び液保持性の吸収体を具備し、着用者の胴回りに位置する胴周部、周方向に向けて配された複数の胴周部弾性部材を備えたパンツ型の吸収性物品において、

前記胴周部弾性部材は、前記吸収体が存在しない部位においては、弾性伸縮性が発現されるように伸張状態で固定され、前記吸収体が存在する部位においては、固定されずに切断されており、実質的に弾性伸縮性が発現されず且つギャザーが形成されていない吸収性物品。

【請求項2】 前記胴周部弾性部材は、吸収性物品の最外表面を形成する外層材と、防漏シート又は他のシート材とにより挟持固定され、前記吸収体が存在する部位において、少なくとも防漏シート又は他のシート材と共に切断されている請求項1記載の吸収性物品。

【請求項3】 前記胴周部における前記吸収体が存在する部位に、胴周部弾性部材を隠蔽する隠蔽手段が設けられている請求項1又は2記載の吸収性物品。

【請求項4】 前記隠蔽手段が、隠蔽シートである請求項3記載の吸収性物品。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は、漏れ防止性に優れ、見栄えの良い吸収性物品に関する。

【0002】

【従来の技術及び発明が解決しようとする課題】一般に使い捨ておむつは、液透過性の表面シート、液不透透性の防漏シート、及び液保持性の吸収体を具備し、着用時に着用者の腹側に位置する腹周部と、背側部に位置する背側部と、その間に位置する股下部とに分かれている。最近では、腹周部の側縁部と背側部の側縁部とを互いに接合固定して左右一対のレッグ開口部及び一つのウエスト開口部を形成したいわゆるパンツ型の使い捨ておむつが提案されている（特開昭61-207605号等）。

【0003】このようなパンツ型の使い捨ておむつは、いわゆるフラット型のおむつと比較して通常のパンツと同様に上げ下げができるという点に特徴を有する。また、一対のレッグ開口部とウエスト開口部とをそれぞれ伸縮自在に形成することにより、おなか回りと足回りとを着用者に密着させ、フィット性を向上させることができる。しかも、通常着用者が立位状態で着用することができる。このため、はいはいや歩行等動きが活発になった子供用、幼児のおむつ離れを促進するためのトレーニング用、失禁者や歩行可能な成人用等種々の用途に用いられている。

【0004】パンツ型の使い捨ておむつに対しては、おむつのずれ落ちを抑え、排泄物を漏らさないようにするために優れたフィット性を有していること、さらには、着用者の活発な動きに追従することが要求されている。

このような要求に対応するため、いわゆるブルアップ型のパンツ型おむつでは、特開平2-4364号公報において、本体の背側部分と腹側部分とを接続するサイド部分に伸縮性のサイドパネルを設け、本体のウエスト開口部に弾性部材を配置したパンツ型おむつが開示されている。しかしながら、このパンツ型おむつは、ウエスト開口部及びレッグ開口部に隙間が生じ易く、また、サイドパネルは伸縮応力特性に劣るものしか作成できず、このように伸縮応力特性に劣るサイドパネルしか伸縮可能でないで一般にサイズ適性範囲が狭く、おむつのずれ落ちを抑えるには、サイドパネルの伸縮応力を高めなければならず、着用者に無用の圧迫感を与えており、また、おむつを広げたときに過度の力を要し、はかせやすさ、はきやすさも損なうことがあった。

【0005】また、特許第2134031号公報においては、胴周部の全周にわたりギャザーを形成し、おむつの胴廻りが着用者に確実にフィットするようにしたパンツ型の使い捨ておむつが提案されている。この提案にかかる使い捨ておむつは、全周が伸縮するので、ゴミの伸張率を2倍程度に抑えても、着用者の胴周部のサイズ適用範囲を広く取ることが可能であった。また、特開平7-265357号公報においては、胴廻りの両側部に実質的に連続したギャザーを形成している弾性部材を備えたパンツ型おむつが提案されている。

【0006】以上のように、着用者の胴方に胴廻りギャザーが形成されるようにした使い捨ておむつは、種々提案されているが、未だ、幅広いサイズ適性と優れたはかせやすさを有し、適正な締め付け力で好適なフィット性を確保し、しかも見た目に優れたものは提案されていないのが現状である。

【0007】従って、本発明の目的は、幅広いサイズ適性と優れたはかせやすさ、適正な締め付け力で好適なフィット性を確保し、しかも見た目に優れた、胴廻りギャザーを有するパンツ型おむつ等の吸収性物品を提供することにある。

【0008】

【課題を解決するための手段】本発明は、液透過性の表面シート、液不透透性の防漏シート、及び液保持性の吸収体を具備し、着用者の胴回りに位置する胴周部、周方向に向けて配された複数の胴周部弾性部材を備えたパンツ型の吸収性物品において、前記胴周部弾性部材は、前記吸収体が存在しない部位においては、弾性伸縮性が発現されるように伸張状態で固定され、前記吸収体が存在する部位においては、固定されずに切断されており、実質的に弾性伸縮性が発現されず且つギャザーが形成されていない吸収性物品を提供することにより、前記目的を達成したものである。

【0009】

【発明の実施の形態】以下、本発明の吸収性物品の好ましい実施形態について詳細に説明する。本実施形態の

吸収性物品としての使い捨ておむつ1は、図1〜3に示すように、液透過性の表面シート2、液不透過性の防漏シート3及び液保持性の吸収体4を具備し、着用品の胴回りに位置する胴周部Dに、周方向に向けて配された複数の胴周部弾性部材9を備えたパンツ型の吸収性物品である。

【0010】具体的に、本実施形態のパンツ型の使い捨ておむつ1は、表置シート2と防漏シート3と吸収体4とを具備する吸収性本体10、及び吸収性本体10の外側に位置して吸収性本体10を接着固定している外層部5からなる。本発明の使い捨ておむつ1の基本構造について更に説明すると、本実施形態の使い捨ておむつ1は、外層部5の腹側部Aの一側縁A1と背側部Bの一側縁B1とが、また外層部5の腹側部Aの他側縁A2と背側部Bの他側縁B2とが、それぞれ接合されて、ウエスト開口部8及び一对のレッグ開口部7が形成されている。本実施形態においては、ウエスト開口部8に沿ってウエスト弾性部材81として2本のゴムが配置され、レッグ開口部7に沿ってレッグ弾性部材71として3本のゴムが配置されている。

【0011】また、吸収性本体10の長手方向左右両側には、自由端近傍に伸縮可能に立体ガード弾性部材B1が配置された立体ガード6が設けられている。立体ガード弾性部材B1は、吸収性本体10の長手方向に沿って、所定間隔を空けて4本配されている。

【0012】而して、本実施形態の使い捨ておむつ1においては、胴周部弾性部材9は、吸収体4が存在しない部位D1においては、弾性伸縮性が発現されるように伸張状態で固定され、吸収体4が存在する部位D2においては、固定されずに切断されており、実質的に弾性伸縮性が発現されず且つギャザーが形成されていない。

【0013】更に詳述すると、胴周部弾性部材9は、吸収体4と重なる部位、即ち吸収体4が存在しない部位D1においては、使い捨ておむつ1の最外表面を形成する外層材51と、身体側に位置する他のシート材としての弾性部材固定シート52とにより接着剤を介して挟持固定されている。吸収体4が存在する部位D2においては、他の部材に固定されずに弾性部材固定シート52と共に切断されている。即ち、本実施形態において、外層部5は、外層材51と弾性部材固定シート52とを具備する。また、ウエスト弾性部材81及びレッグ弾性部材71も、外層材51と弾性部材固定シート52とにより挟持固定されて、外層部5を構成している。

【0014】また、本実施形態においては、胴周部Dにおける吸収体4が存在する部位D2に、胴周部弾性部材9及び弾性部材固定シート52の切断部分を隠蔽する隠蔽手段として、隠蔽シート53が、外層材51の内面側に配されている。胴周部弾性部材9は、吸収体4が存在する部位D2においては、弾性部材が非機能化されているものの、弾性部材の切れ端が外側より出て見

える場合があるが、隠蔽シート53が設けられていることで、その切れ端を隠蔽することができ、見栄えが良くなる。更に、本実施形態においては、吸収体4の存在する部位D2においては、外層材51と弾性部材固定シート52との間に、補助シート54が配されており、胴周部弾性部材9は、補助シート54と弾性部材固定シート52との間に位置し、隠蔽シート53は、補助シート54と外層材51との間に位置するように配されている。補助シート54は、隠蔽シート53よりも若干幅広であり、長さは、外層部5の幅とはほぼ同じである。これにより、胴周部弾性部材9は、補助シート54を介して、外層材51及び弾性部材固定シート52により固定されている。そして、切断された胴周部弾性部材9は、収縮した状態で吸収体4の幅方向側部に位置している。また、本実施形態においては、胴周部弾性部材9は、伸張した状態で外層部5を構成する各シート間に固定することなく配されて、切断されているため、胴周部弾性部材9の切断に際して、弾性部材固定シート52及び補助シート54も、切断されて、図2に示すように、プレカット開口55が形成されている。

【0015】隠蔽シート53の大きさは、プレカット開口55を隠し、更に胴周部弾性部材9の乱れたカットエッジを隠すことのできる程度にするのが好ましく、本実施形態においては、長さ20〜150mm、幅250〜500mmの長方形状としている。但し、隠蔽シート53は、液不透過性シートを兼ねることができ、その場合は吸収体4に対して必要な面積分が配置される。また、隠蔽シート53には、着用中に外側から見える印刷、例えば、前後の区別や、透過性の表示、キャラクター、ブランド名、廃棄手段等の印刷模様が印刷により形成されていることが好ましく、本実施形態においては、キャラクターとしてのウサギの絵からなる印刷模様53aが印刷されている。この印刷模様53aは、外層材51を通して外部に認識されるようになされている。即ち、本実施形態で用いている外層材51は、印刷模様53aが透けて見えるようになされている。本実施形態のように、胴周部弾性部材9によるギャザーが形成されていない場合には、従来の吸収性物品のようにキャラクター等の印刷がギャザーのしわによって見えづらくするという欠点が解消される。また、本実施形態における印刷模様53aは、隠蔽シート53の長手方向略中央部にひとと設けられている。このように、印刷は、連続模様53aよりも、1枚あたりひとつの印刷パターンとするのが、製品の中で模様が分散されることがなく、見た目にも完成度が高いという点で好ましい。また、本実施形態のように、プレカット開口55が生じた場合には、吸収性本体10と外層部5との接着を避けて、プレカット開口55を除いて接着する等の考慮をすることが好ましい。

【0016】胴周部弾性部材9の形成材料としては、天然ゴム、スパンデックス、発泡体、フィルムタイプの

ゴム等公知の弾性部材、形態としては、断面が矩形、正方形、円形、多角形状の糸状のものやテープ状のものが好ましい。熱によって可塑化する性質の弾性部材も好適に用いられる。外層材51の形成材料としては、好ましくは液抵抗性、液不透過性で透湿性、通気性を有し、肌着に近い感触の高可撓性シートで、具体的には織布、不織布、フィルム、透湿フィルム、開孔フィルムや、これらの複合材が用いられる。立体ガード6の形成材料は、液抵抗性、液不透過性かつ通気性の素材であるのが好ましい。防漏シート3の形成材料は、透湿性、通気性を有する材料であるのが好ましい。また、表面シート2及び吸収体4の形成材料は、特に制限されず、公知の材料を特に制限なく用いることができる。図層シート53の形成材料としては、肌着に近い感触の高可撓性シートで、具体的には織布、不織布、フィルム、透湿フィルム、開孔フィルム、紙や、これらの複合材が用いられる。不織布のなかでは、メルトブローン不織布やスパンボンド不織布、メルトブローン不織布とスパンボンド不織布を組み合わせたものが隠蔽性が高く、特に好ましいが、これに限られるものではない。隠蔽シートは、その外面に印刷パターンが施されているものが好ましい。補助シート54の形成材料としては、肌着に近い感触の高可撓性シートで、具体的には織布、不織布、フィルム、透湿フィルム、開孔フィルム、紙や、これらの複合材が用いられる。

【0017】本実施形態のパンツ型の使い捨ておむつ1は、通常のパンツ型の使い捨ておむつと同様に使用することができる。そして、本実施形態の使い捨ておむつ1は、上述の如く構成されているので、幅広いサイズ適性と、優れたはかせやすさ、適正な締め付け力を有し、すっきりした外観を有し、吸収体がひだ寄せされないために、厚さが薄くなり、また、吸収体がひだ寄せされず、着用中に吸収体が縮むことがないため、必要とされる吸収体の幅が少なくても吸収性を維持することができる。吸収体を小さくできるため、使用材料を削減しコストダウンを達成でき、さらにコンパクト化を達成できる。

【0018】本実施形態のように部分的に胴回りギャザーを配置した使い捨ておむつは、特に下記の3つの利点を有する。

①吸収体が胴回りギャザーによりひだ寄せされず、吸収体の幅を有効に使って着用者にフィットさせることができる。吸収体がひだ寄せされると、着用中の吸収体幅が実際の吸収体幅よりも狭くなるため、吸収性能が低下する恐れがある。また、吸収体がひだ寄せされないように、おむつの内寸を着用者の胴回り寸法と一致させ、胴回りの弾性部材をほぼ伸長率倍に引き伸ばしても、胴回り寸法が小さすぎれば早く、使い捨ておむつの内寸を最大として着用させた際に胴回りの弾性部材の応力が最大値を発現するように構成されているため、ほとんど現

実的でない。さらに、吸収体のひだにより、ごわごわした感触が生じ、ホットメルト型接着剤の塗工方法でいくらかは改善されるものの、その感触は払拭しきれない。

②着用時の外観（見た目）がすっきりすること。おむつの前面と後面の中央部分にひだひだがなくなり、見た目がすっきりするためである。

③吸収体の幅を狭く形成できるので、吸収体を使用する材料（不織布、キャリアティッシュ等）を削減でき、コストダウンに有効である。

【0019】本実施形態の使い捨ておむつ1は、まず、常法に従って、吸収体本体10を作成する。更に、胴周囲弾性部材9を弾性部材固定シート52と補助シート54とで挟持し、所定箇所を切断処理して、胴周囲弾性部材9を切断し、更に補助シート54の外側に隠蔽シート53を貼り合わせて、外層材51と弾性部材固定シート52とでウエスト弾性部材81及びレッグ弾性部材71を挟持固定すると同時に、両者を接合して、外層材5を形成する。最終に得られた外層材5と吸収体本体10とを接合し、外層材5における腹側部A及び背側部Bの左右両側縁をそれぞれ接合固定してパンツ型とすることにより、得られる。

【0020】切断は、ロータリダイカット、シェアカッター、ピンチカッターなどの切り歯と受け歯の組み合わせや、熱シールカット、超音波シールカット、圧接カット、ウォータージェットカッター等業界公知の切断手段を用いて行うことができる。また、切断は、補助シート54または弾性部材固定シート52に胴周囲弾性部材9を沿わせた状態で行うこともできる。その時には胴周囲弾性部材9はいずれかの材料に仮固定しておく必要がある。また、補助シート53と弾性部材固定シート52とを貼り合わせる直前に切断してもよい。熱シールカットによる切断方法としては、一對のロールの両方または一方を加熱し、自重または追加的に圧力かけたロール間を通して、カットすべき部位の胴周囲弾性部材9及びこれを挟持する各シートに、胴周囲弾性部材9を切断可能なシールパターンで熱及び圧力を用いる方法がとられる。熱シールロールの温度条件は、線圧・線速によって最適条件は異なるがほぼ50〜300℃の範囲である。好ましいシールパターンは非接着領域の胴周囲弾性部材をそのほぼ中央部で直交して切断するに最小限の線状のパターンである。複数本の胴周囲弾性部材の場合、複数量に分けて切断してもよい。

【0021】なお、本発明は、上述の実施形態に制限されるものではなく、大人用、子供用使い捨ておむつの他に、生理用ナプキン、失禁パッド等にも適用可能である。また、胴周囲弾性部材9は、吸収体4が存在しない部位の略全縁において弾性伸縮性を発現するよう配したものを例示して説明したが、一部のみに弾性伸縮性を発現するようにしても良い。胴周囲弾性部材9は、前身頃の側部にだけ接着してもよいし、後身頃の側部に

だけ接着してもよい。前身頃の胴周部弾性部材9を胴部だけに接着した場合には、前から見たときのおむつの外観がすっきりし、後身頃の胴部だけに接着させた場合には、後ろから見たときのおむつの外観がすっきりし、廃棄用のテープの接着がしやすい、印刷が見やすい等のメリットがある。また上述した例では胴周部弾性部材9は吸収体を横切るように配置されているが、吸収体の長さを短くしたり、吸収体を前身頃に変位させることで、吸収体の上方にも胴周部弾性部材9を配置することができる。このように複数の胴周部弾性部材9のうち吸収体の上端縁よりもウエスト開口部側に位置するもの(以下、これを上方弾性部材という)がある場合、上方弾性部材は、全体が伸縮可能に配しても良く、また吸収体の側縁縁から延長線を引いた場合に、2つの延長線の内方に位置する部分は非伸縮性とし且つその外方に位置する部分は伸縮可能なように配設してもよい。ウエストギャザーの近傍に配置される胴周部弾性部材も、同様である。

【0022】なお、胴周部弾性部材9は、接着剤を用いずに、ヒートシール等公知の手段を特に制限なく用いて固定することができる。胴周部弾性部材9の非接着領域において、基本的に補助シート54と弾性部材固定シート52との間にホットメルト型接着剤は存在させないが、全く接着しない場合には材料が4層で構成されて体裁が堅くなる場合も有するため、胴周部弾性部材9の存在しない部分において接着剤を塗工したり、塗工しても差し支えない量の接着剤を塗工してもよい。なお、上述した実施形態においては、本発明の所望の効果を得るべく、最も好ましい形態として、吸収体と重なる領域の胴周部弾性部材9はすべて非伸縮としているが、必ずしもこれに限らず、吸収体上の少なくとも一部の弾性部材が非伸縮であればよい。非伸縮性とする範囲については、幼児用のパンツ型おむつについては、吸収体幅のほぼ1/2以上か、製品全幅のほぼ1/2.0以上3/4以下のどちらかの非伸縮の範囲であることが好ましい。大人用のパンツ型おむつについては、吸収体幅のほぼ1/3以上か、製品全幅のほぼ1/2.0以上3/4以下のどちらかの非伸縮の範囲であることが好ましい。

【0023】股下部Cに向けてさらに複数本の弾性部材を配置することもでき、すれ落ちの抑制と、外観を向上させたりすることに有効である。胴周部Dのギャザーが湾曲するように胴周部弾性部材9を配置することもできる。補助シート54は、弾性部材固定シート52の内面(身体)側に配置してもよい。その際、隠蔽シート53は弾性部材固定シート52の外側に配置することになる。なお、上述の実施形態のようにブレイク開口55を生じないようにし、胴周部弾性部材9は切断するが、補助シート54と弾性部材固定シート52とは全

くダメージを残さないように切断を行ってもよい。また、隠蔽シート53は外層材51の外側に配しても良く、この場合にも上述の実施形態と同様の効果を達成することができる。上述の実施形態においては、隠蔽手段として隠蔽シート53を別途設けたものを例示したが、外層材51として隠蔽性の高い材料からなるものを用いて隠蔽シート53を省き、外層材51自体を隠蔽手段としてもよく、この場合には、外層材51に印刷が施されていることが好ましい。なお、胴周部弾性部材9をあらかじめ切断しておき、切断された胴周部弾性部材9を吸収体4が存在しない部位D2に、接着していくことで製造してもよい。

【0024】

【発明の効果】本発明の吸収性物品は、幅広いサイズ適性と優れたたけさせやすさ、適正な締め付け力で好適なフィット性を確保し、しかも見た目に優れた、漏れ回りギャザーを有するものである。

【図面の簡単な説明】

【図1】図1は、本発明の吸収性物品としての使い捨ておむつ1の実施形態を示す斜視図である。

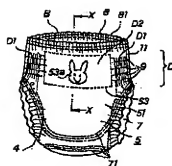
【図2】図2は、図1に示す使い捨ておむつの展開状態を示す分解斜視図である。

【図3】図3は、図1に示す使い捨ておむつのX-X断面図である。

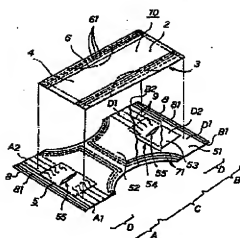
【符号の説明】

- 1 使い捨ておむつ
- 10 吸収性本体
- 11 接合部
- 2 表面シート
- 30 3 防漏シート
- 4 吸収体
- 5 外層材
- 51 外層材
- 52 弾性部材固定シート
- 53 隠蔽シート
- 54 補助シート
- 55 ブレイク開口
- 6 立体ガード
- 61 立体ガード弾性部材
- 7 レッグ開口部
- 71 レッグ弾性部材
- 8 ウエスト開口部
- 81 ウエスト弾性部材
- 9 胴周部弾性部材
- A 腹側部
- B 背側部
- C 股下部
- D 胴周部

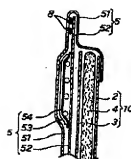
【図1】



【図2】



【図3】



フロントページの続き

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